

Board Administration and Regulatory Coordination Unit

Division 3. Air Resources Board

Chapter 5. Standards for Motor Vehicle Fuels

Article 1. Standards for Gasoline

Subarticle 2. Standards for Gasoline Sold Beginning March 1, 1996

§ 2263. Sampling Procedures and Test Methods.

(a) Sampling Procedures.

In determining compliance with the standards set forth in this subarticle 2, an applicable sampling methodology set forth in 13 C.C.R. section 2296 shall be used.

(b) Test Methods.

(1) In determining compliance with the standards set forth in this subarticle 2, the test methods presented in Table 1 shall be used. All identified test methods are incorporated herein by reference.

Table 1

<i>Section</i>	<i>Gasoline Specification</i>	<i>Test Method^a</i>
2262	Reid Vapor Pressure	ASTM D 323-58 ^b or 13 C.C.R. Section 2297
2262	Sulfur Content	ASTM D 2622-94 ^{c,d} or ASTM D 5453-93
2262	Benzene Content	ASTM D 5580-95 ^e
2262	Olefin Content	ASTM D 1319-95a ^f
2262	Oxygen Content	ASTM D 4815-94
2262	T90 and T50	ASTM D 86-90
2262	Aromatic Hydrocarbon Content	ASTM D 5580-95 ^g
2262.5(b)	Ethanol Content	ASTM D 4815-94a
2262.6	MTBE Content	ASTM D 4815-94a

^aDo not report values below the limit of detection (LOD) specified in the test method. Where a test method does not specify a LOD, do not report values below the lower limit of the scope of the test method.

^bDelete paragraph 4(b) concerning sampling.

^cMake the following modifications to paragraph 9.1:

Low Level Sulfur Calibration Procedure

Reagents

Thiophene, at least 99% purity

2-Methylthiophene, at least 98% purity

Toluene, reagent grade

2,2,4-Trimethylpentane, reagent grade

Preparation of Stock Standard

Weigh standard materials thiophene (~0.7290 gm) and 2-methylthiophene (~0.7031 gm) separately into a tared volumetric flask and record the individual mass to 0.1mg. Add "mixed solvent" containing 25% toluene and 75% iso-octane (by volume) into the flask to a net weight of approximately 50 gm and record the weight. This "Stock Standard" contains approximately 10 mg/gm sulfur. The actual sulfur concentration can be calculated as follows:

Sulfur from thiophene (gm) =

Weight of thiophene *32.06* purity/84.14

Sulfur from 2-methylthiophene (gm) =

Weight of 2-methylthiophene *32.06* purity/98.17

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Sulfur concentration of Stock Standard (gm/gm) =
(sulfur from thiophene + sulfur from 2-methylthiophene)/net weight of the stock standard

Multiply the sulfur concentration by 1000 to convert the unit to mg/gm.

Preparation of Calibration Standards

Pipet 2.5 ml of the Stock Standard to 250 ml flask and dilute with the "mixed solvent" to the mark. The "Dilute Standard" contains approximately 100 mg/kg sulfur. Prepare 5, 10, 20, 30, 50, 75 ppm calibration standards by pipetting 5, 10, 20, 30, 50, 75 ml of the Diluted Standard into a 100 ml flask, respectively, and diluting with the "mixed solvent" to the mark. The actual concentration of the calibration standard should be determined from the stock standard. The standards with concentration ranging from 5 to 100 ppm and the "mixed solvent" are to be used for calibrating the instrument.

^dReplace ASTM D 2622-94 reproducibility values with the following:

<i>Sulfur Content, ppm</i>	<i>Reproducibility</i>
10 to 30	40.5% X Sulfur Content (ppm)
>30	19.2% y Sulfur Content (ppm)

^eThe reproducibility of benzene is as follows:

Reproducibility = 0.1409 (y1.133), where X = vol %

^fAdd the following reproducibility statements for oxygenate-containing samples:

	<i>Range</i>	<i>Reproducibility</i>
Olefins	0.3 – 33	0.819(X)0.6

X = Volume %

^gThe reproducibility of total aromatic hydrocarbon is as follows:

Reproducibility = 1.4 vol%

(c) Equivalent Test Methods.

Whenever this section provides for the use of a specified test method, another test method may be used following a determination by the executive officer that the other method produces results equivalent to the results with the specified method.

NOTE: Authority cited: Sections 39600, 39601, 43013, 43013.1, 43018 and 43101, Health and Safety Code; and *Western Oil and Gas Ass'n. v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal. Rptr. 249 (1975). Reference: Sections 39000, 39001, 39002, 39003, 39010, 39500, 39515, 39516, 41511, 43000, 43013, 43013.1, 43016, 43018 and 43101, Health and Safety Code; and *Western Oil and Gas Ass'n. v. Orange County Air Pollution Control District*, 14 Cal.3d 411, 121 Cal. Rptr. 249 (1975).

REFERENCE